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1609/4889.

A BRIEF
A C C O U N T
OF THE
Q U A L I T I E S
OF THE
NEWLY-DISCOVERED,
MINERAL WATER
A T
M I D D L E - H I L L,
N E A R
BOX, in WILTSHIRE.

SECOND EDITION.

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OF BATH, M.D. F.R.S.

BATH, PRINTED BY R. CRUTTWELL;
AND SOLD BY THE BOOKSELLERS, PRICE 2/6.

MDCCLXXXIX.

Batchelor
1 Beaufort Buildings Bath

1609/4889.





A

BRIEF ACCOUNT

OF THE QUALITIES OF

MIDDLE-HILL WATER.

IN the spring of the year 1783, Mr. WEST, a baker, who lives at Middle-Hill, near Box, about five miles from the city of Bath, sunk a well for the purpose of finding water for the supply of a house which he was building there, with a view to let it as a country lodging during the summer season. No water was found for a considerable depth; some however was at last discovered, which, to the surprize of those who examined it, was

found salt to the taste.—When they had sunk to the depth of 80 feet, the water flowed in such quantity as to fill the well to the surface of the ground, and to run out in a small stream.

The spring rises on a pleasant eminence, from a gravelly soil, with an aspect to the south-east. The situation is sheltered by the surrounding hills, but enjoys a delightful prospect. There is now built a convenient Pump-room, with a pump that descends about 60 feet from the surface of the earth.

The water, whilst the spring remained exposed to the air, was somewhat of a pearly colour; but now (the spring being inclosed) is perfectly clear. The smell of it is very perceptibly sulphureous, resembling the scouring of a foul gun; which however soon evaporates on standing in an open vessel. Its taste is evidently saline, with some degree
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of briskness, and a sulphureous flavour that strikes the palate as well as the nose. After a few times drinking, it becomes not unpalatable.

Specific Gravity.

I filled a glass vessel, in shape like the bulb of a thermometer, with a foot to stand upon, and a neck about four inches long and tapering at the end to the size of a large pin, with the Middle-Hill water, and weighed it accurately in a nice balance. It weighed, deducting the weight of the vessel, eight ounces two drams troy weight. The same quantity of distilled water weighed 8 oz. 1 dr. 2 scr. 3 gr. or 17 grains less than the Middle-Hill water.

N. B. This is about 30 grains in a pint heavier than distilled water. The specific gravity of the Middle-Hill water compared

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with

with the King's-Bath water, and the other springs that supply the city of Bath for the purpose of diet, &c. is as follows :

Middle-Hill water	{ 30 grains in a pint heavier than distilled water.
King's-Bath water —	24 ditto
Pump water of Bath	18 ditto
Beechen-Cliff reservoir	14 ditto
Claverton-hill reservoir	$13\frac{1}{2}$ ditto
Beacon-hill reservoir	14 ditto
Circus reservoir —	12 ditto
Water of the river Avon	12 ditto

Contents on Evaporation.

The quantity of water above weighed was poured into a clean brass saucepan, and slowly evaporated over the fire. When about three-fourths of it were boiled away, the remainder was poured into a glass vessel, and
set

set by to cool, a dark brownish red precipitation was deposited, too fine to be collected, and but in small quantity. The water thus poured off was slowly evaporated to dryness in an earthen faucer, and left of residuum 11 grains of crystallized saline matter, of an acrid pungent taste, which, viewed with a microscope, appeared to be partly composed of prismatical and partly of cubical shaped crystals.

A few granules of this salt laid on a piece of paper, rubbed with the juice of a blue flower, turned it to a pale green colour, and the water itself at the spring had the same effect, though but in a slight degree.

Acids.

About a table spoonful of vinegar was poured into a half pint glass of the water taken up fresh from the well, but no change ensued.

ensued. The same was tried with six drops of oil of vitriol, but with no perceptible effect.

Acid of Sugar.

A few grains of acid of sugar were added to about eight ounces of Middle-Hill water, a white precipitation soon began to appear as the acid of sugar dissolved, which on stirring was diffused through the whole of the fluid.

Alcalies and Lime Water.

Five grains of salt of tartar were added to half a pint of the water taken from the well; a white cloudy precipitation immediately followed.

Half an ounce by measure of lime-water was added to an ounce and a half of the water fresh from the well; a plentiful milky precipitation immediately followed.

Solution

Solution of Lead.

Ten drops of solution of sugar of lead in vinegar were added to two ounces of the water; a cloudy white precipitation followed, which, held up to the light, gave a reddish brown tinge. Nearly the same appearance took place on adding a few drops of a solution of sugar of lead in distilled water to the Middle-Hill water.

*Effects of the Vapour of the Water on Solution
of Sugar of Lead.*

Some words were written on a card with a solution of sugar of lead in distilled water, and the card when dry placed on the top of a glass containing the Middle-Hill water fresh drawn. The letters became gradually of a light reddish brown colour.

Solution

Solution of Silver.

Ten drops of solution of silver in the nitrous acid, were added to eight ounces of the Middle-Hill water, a white cloudy precipitation immediately appeared, which gradually spread through the body of the liquor.

Tincture of Galls.

Eight drops of tincture of galls were put into two ounces of the water. A slight change of colour ensued, but not more than was produced by adding the same quantity of the tincture to eight ounces of common water. After standing 48 hours the mixture became of a dark reddish brown colour, with a precipitate red at the bottom, and green at the top, with a green scum on the surface of the liquor. After standing five days, the sediment was stirred up from the bottom,

bottom, and the whole evaporated in an earthen saucer. The residuum weighed three grains and a half, and was of a dark green colour, and sharp saline taste. A few granules put on a red-hot iron melted and turned black, but gave no smell of sulphur, nor were its particles attracted by the magnet.

If carefully taken up, and accurately corked, this water retains its original sulphureous smell and flavour very strongly. I opened a bottle that had been taken up about ten days, before several gentlemen of the profession, who all agreed in this report of its sensible qualities. Several pieces of stone that were taken up in sinking for the well, were covered with a shining pyritical crust, and smelt strongly of sulphur.

These experiments throw considerable light on its general properties. It appears from them that it contains about 30 grains
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in a pint of foreign matter dissolved in it; that about 21 grains of this is of a saline nature, part of which is Epsom salt, part common salt, and probably part the fossil alkali. The remainder, which is probably sulphureous, was dissipated in a good measure by the heat.

The experiment with tincture of galls shews, that the sulphureous quality is not lost by keeping. Three drops of a solution of liver of sulphur in water, mixed with two ounces of common water, gave exactly the same appearances on the addition of eight drops of tincture of galls, as the Middle-Hill water did.

Fixible air appears to be one of the impregnations of this water. Very little selenites, or other unneutralized earthy matter, appears to enter into its composition. It does not appear to possess the least chalybeate impregnation.

This water to some persons has proved gently laxative, but this seldom took place in robust constitutions, unless large quantities were taken. Its more general effect was that of a powerful diuretic. In some persons it went off by perspiration. In either case it seemed to agree well with the general health and habit of body. I have enquired of many persons who have drank this water for various complaints, but have not found that any disagreeable effects were produced by it. Though unpleasant at first, the palate is soon reconciled to it, and some have even drank it with pleasure; no sickness, nausea, or vomiting, have followed the use of it in any cases I have seen, but the appetite in general seems to have been increased, and the evacuations more regular than before.

Experience will best determine what medicinal qualities this water possesses; but we
may

may reasonably expect, from the similarity of its chemical qualities to those of other waters now in use, that it may be serviceable in all the cases wherein purging sulphureous waters are recommended, such as foul eruptions on the skin, worms, acidity of stomach, with a costive habit, many biliary symptoms, hæmorrhoidal complaints, scrophula, inflammations of the eyes, and several others.

It wants indeed the chalybeate impregnation of Cheltenham water, upon which much stress is laid by some as strengthening the organs of digestion, and enabling the system to support repeated evacuations. But we should consider, that, as Dr. HEBERDEN observes, "the water of purging springs in general, or indeed solutions of neutral salts, may be taken daily for several months, without palling the appetite, or exhausting the strength or spirits."

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The same writer mentions his knowing a weakly person, who for a strumous inflammation of the eyes was gently purged with sea-water three times a week for a twelve-month, and rather gained than lost flesh during the course.

We have therefore no reason to apprehend any injury from the use of this water prudently administered, even for a long time; and there is every reason to think it may be equally useful, in the complaints above-mentioned, with Cheltenham, Harrowgate, or any of the other purging sulphureous waters; whilst its proximity to the cities of Bath and Bristol, and the western parts of this kingdom, render it infinitely more convenient and easy of access.

Another advantage this spring possesses over that at Cheltenham is, that it is much more plentiful; that at Cheltenham is not
computed

computed to yield more than half a pint in a minute of time, whereas this spring yields enough to supply not only all the people that could have occasion to drink it, but a surplus moreover to furnish what might be wanted to send away for use at a distance.

The following Cases, to which several more might be added, are given upon the best authority, the persons they refer to having been visited by Mr. NICHOLS, an eminent surgeon of Bath, during the course of their disorder, and the accounts subjoined being perfectly agreeable to his observation. The cases are described from the relations of the persons themselves, and as nearly as possible in their own words.

The enquiry and examination I myself made concerning the truth of their narratives, gave me full satisfaction.

CASES

C A S E S

*That have received benefit from the use of the
Mineral Water at Middle-Hill.*

Aug. 1786.

John Plaisted, clerk to Mr. Sone, butcher, in Northgate-street, Bath, had for several years been subject to an eruption of a red colour, with small protuberances with clear white heads, that itched violently. This appeared chiefly on his hands and wrists, but sometimes on the body. It was most troublesome about the spring and fall, scarce appearing in the winter, and but little in the heat of summer. When it was out upon him, he complained of lowness of spirits, and want of appetite: he had tried various remedies, such as Cream of Tartar with Jalap in small quantities, an infusion of the leaves of the Black Currant Tree, which he took a long time, an infusion of

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Elm

Elm Bark, and a course of Ethiop's Mineral, but all without any benefit.

About the middle of last summer he began the use of the mineral water at Middle-Hill, drinking about a pint a day of the water that had been brought to Bath in bottles, until he had drank it about six weeks, in which time he took about six gallons. In fourteen days time, after he first began to try the water, his eruption began to diminish, and his health and spirits to improve. He is now perfectly well, and has been so a considerable time, his spirits good, and the eruption quite disappeared. He is now beginning to drink the water again, as he feels a slight itching on his wrist.—The only sensible effect that the water produced, was that of a powerful diuretic.

James Solerol, aged seven years, son of the Butler to the Right Hon. Lord Conyngham, had

had been subject to an acrid moist eruption in divers places of his body from an infant. About two years ago he had the small-pox in the natural way, after which his eyes became inflamed and watery, and much swelled, the right eye especially, which was nearly deprived of the power of sight. For this he took various remedies, such as several doses of calomel—a course of Æthiop's mineral---Peruvian bark---occasional purges, and many other remedies, besides the application of a blister to the back, but all without effect.

In October last he began to drink the Middle-Hill water, of which he drank about half a pint daily at three times. In about a week's time he began to feel its good effects, his sight improved, the swelling diminished, and in about six weeks were both quite gone, and his sight was perfectly restored. He was of a very weak and relaxed habit whilst subject

to the above complaints, but is now strong and active, and perfectly healthy. He had drank the waters of Holt, in Wiltshire, nine weeks for the disorders above described, but without receiving the least benefit.

Jane Milsom, of Colerne, aged 65, had in September last (1785) a large foul superficial ulcer in the right leg, which extended across the shin-bone, and had a very unfavourable appearance. Besides this she had scaly eruptions on many parts of the body, which discharged a thin acrid liquor, but the skin in general was dry and hard. Her stomach was oppressed with flatulence, her appetite was bad, and her body costive.

In the beginning of October last she began the use of the Middle-Hill water, drinking three pints daily, and washing the sores with the same three times a day, and the whole of her body at bed-time.

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In a week's time she began to find benefit; the scales of her body separated, and left the skin soft underneath, and the sore began to put on a better appearance. In three weeks time the sore was visibly much better, and the body clear of any eruption. In six weeks the sore was perfectly healed; her health also was greatly mended, her flatulence gone, her appetite recovered, and her spirits and strength restored. It acted principally by increasing the quantity of urine, though at first it acted as a gentle purgative; but this effect soon ceased, and an opposite habit came on, so that she was obliged to take a few small doses of jalap, and sometimes a little flour of sulphur and honey, to keep the body regular. She is now perfectly well in every respect.

George Croome, of Wraxhall, aged 18 years, had one continued dry scab over his whole head, which was of seven years standing,
and

and for which various medicines had been tried, both internal and external, without effect. In September last (1785) he was recommended to drink the water at Middle-Hill, of which he took about three pints daily for seven weeks successively, and washed the scabs with it frequently. Some amendment was perceived after a week's trial, and at the end of seven weeks his head was quite cured, and his hair grown out in a natural way. He is free from all complaint at present. The water kept the body gently open, and produced a pleasant general perspiration. During the time of his drinking the water he was employed in husbandry work, and was never confined a moment on the occasion.

Richard Strange, butcher, aged 48 years, of Holloway, adjacent to the city of Bath, had about eleven months ago, a small pimple on his left arm, which was soon succeeded by many others. They were of a red angry cast,

cast, and soon began to discharge an ichorous corrosive humour, and joining together formed an ulcerous inflamed sore of about five inches diameter. The parts were extremely tender to the touch, and so painful as to deprive him of the use of his arm, yet there was but little swelling. For this he tried many remedies, and used many external applications, without any benefit.

About the end of May last he began to drink the Middle-Hill water, which he took in the quantity of about a quart daily, and also washed the sore parts with it. He soon began to feel ease, and the ulcers put on a better appearance, and began to dry up; they are now (August 8, 1786) nearly healed, the tenderness greatly abated, and confined to one small spot, his pain gone, and he has recovered the perfect use of his arm. At the first coming on of the disorder, his head was giddy, his stomach sick, and his

his appetite bad. All these symptoms are now removed, and his health is perfectly restored.

Besides the above, I have had an opportunity of seeing the good effects of the Middle-Hill water in a case of Leprosy, which promises fair to be a complete cure.



